

# Composite Risk Management

- The need for this idea: where are we getting hurt or killed?
- Culture: now & new
- Obstacles to change
- Moving toward CRM

# Combat vs. Accidents

## Combat Losses / Accidents

Spanish-American 15% / 85%

WWI 47% / 53%

WWII 43% / 56%

Korea 55% / 44%

Vietnam 45% / 54%

DS/DS 20% / 75%

OEF 45% / 26%

OIF 75% / 21%

# Composite Loss



# Worker Losses

- 5,500 occupational fatalities (2003)
- 43,000 vehicular deaths (2003)
- Other accidental deaths (2000)
  - 13,300 from falls
  - 12,750 from poisoning
  - 5,650 from suffocation
  - 3,500 from drowning
- Intentional
  - 29,350 suicides
  - 16,750 homicides



# Injuries Needing Medical Treatment

- 23,661,000 in 2002 (out of U.S. population of 278,000,000) – mostly away from work

- Major categories

— Falls.....	7,100,000
— Transportation.....	3,700,000
— Struck by person or object.....	3,700,000
— Overexertion.....	3,100,000
— Cutting, piercing.....	1,700,000
— Other.....	3,700,000



# Injuries Needing Medical Treatment

## When the injuries occur

— Leisure activities.....	5,500,000
— Sports.....	3,700,000
— At work.....	3,600,000
— Driving.....	2,700,000
— Home maintenance.....	2,600,000
— At school.....	800,000
— Other.....	4,800,000
(housework, cooking, eating, shopping)	

# CRM → READINESS

- Dead is dead; injured is injured
- People are unit assets 24/7
- People = Soldiers, civilians, contractors

# Culture NOW

- Old safety= regs dictate job, checklists, compliance, limits, what you can't do
- Attention is on the main mission, not on periphery or off duty
- Compartmentalized thinking
- Result: mission accomplished, yet losing people or equipment “unexpectedly”



# Current Culture: Example

## ■ When is a Soldier not a Soldier?

- Soldier finishes big training exercise safely
- 4 hours sleep, followed by day of errands
- Unit cook-out @ 1700 (with alcohol), then @ 1930 drive 30 miles to club in town
- More drinking (8+ beers), 2 sets of buddies
- Stumbles around bar as buddies watch; leaves bar after curfew
- Dead within 30 minutes (rollover mishap)

# Compartmentalized Thinking

- AR 385-10 functions & responsibilities drive our efforts (not risks)
- Deployed vs. in garrison, tactical vs. accidental, on duty vs. off duty (we are too segmented)



# Ignoring The Periphery

- Do our “To Do” lists at home, include any of the following?
  - Chemicals: solvents, cleaners, combustibles
  - Brute force & sharp edges: knives, saws, scissors, drills, hammers; spring-loaded things
  - Heat: stoves, irons, fireplaces, grills
  - Weight or height: lifting, moving, climbing
  - Electricity: light fixtures, plugs, switches, cords
  - High velocity projectiles: mowing, weed whacking
  - Moving steel vs. flesh: parking lots, intersections, two-lane roads



# Culture NEW

- A loss is a loss
  - Tactical (threat-based), accidental (hazard-based), or even medical, suicide, homicide
  - Terrorist or To Do list: Focus on what can kill you
- Can vs. Can't (can perform aggressively)
  - Holistic analysis of hazards & dangers
  - Controls to reduce or eliminate these
  - Manage resources, enhance readiness (not just “be safe”); produces confident, bold actions
- Everyone matters, all the time

**Tactical,  
threat-based  
risk management**

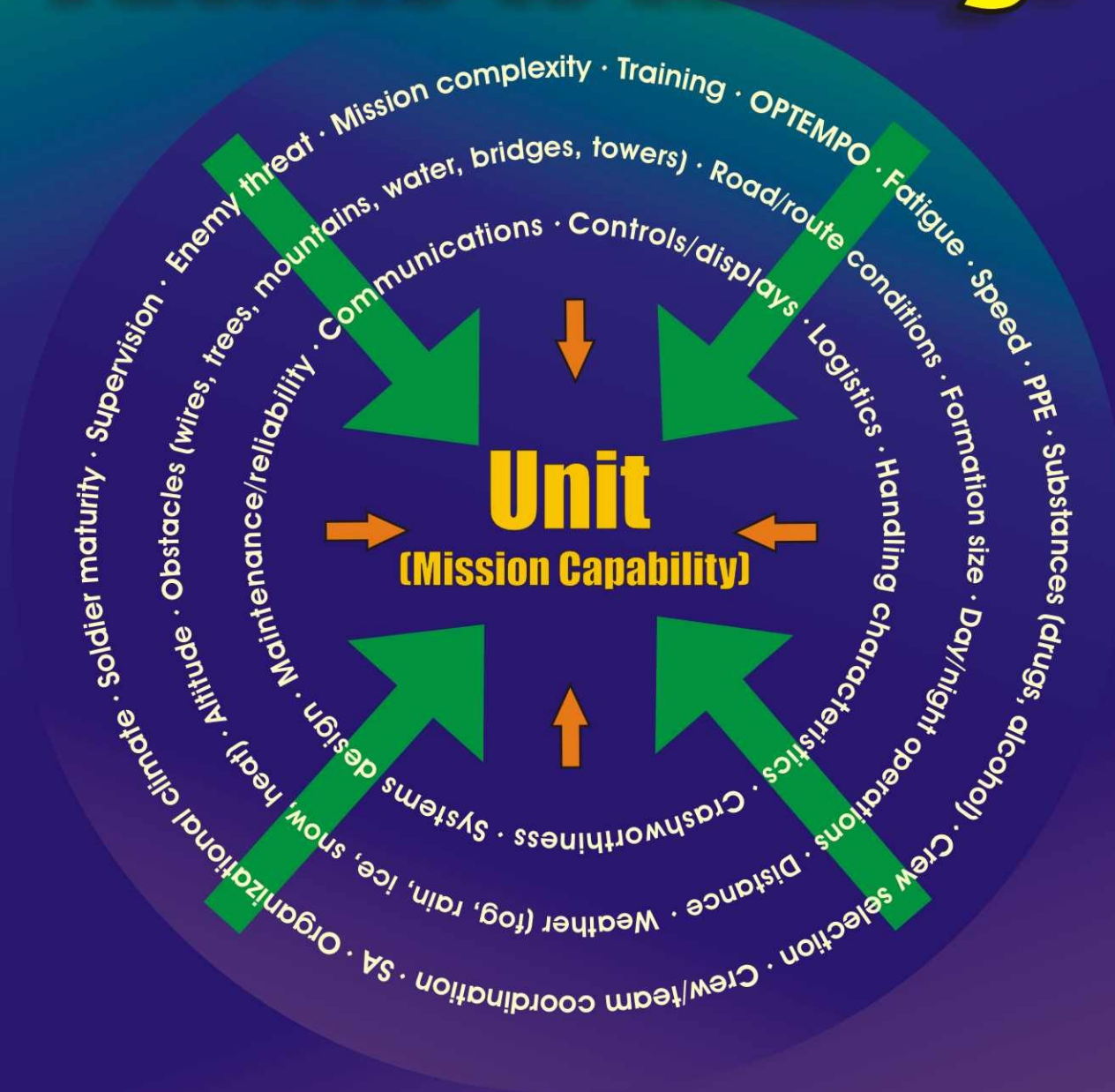
**Accidental,  
hazard-based  
risk management**

**Composite  
Risk Management**

- Enemy
- Environment
- Materiel/system
- Human

**“What’s going to kill me & my buddies?”**

# Factors to Manage





# Obstacles To Transforming

- The safety tradition (compliance mentality, i.e., I have inspections & checklists to do, as opposed to I have risks I need to ID & control)
- Emphasis on things outside of one's control:  
a threat-based propensity
- Discounting factors supposedly within one's control
  - They are familiar, plus I steer my own fate
  - Human error happens occasionally, & when it does, it happens to others, not me

# Obstacles To Transforming

- Lean, mean, risk-taking machines
- Focus is on the main operation & ignore elsewhere
  - Periphery is less sexy so I ignore it
  - No one has the right to tell me how to live my life
- We don't understand cultural change
  - It's an attitude & motivation thing
  - Need buy-in & commitment: WIIFM?
  - Takes time & consistent messages



# Transformed Thinking

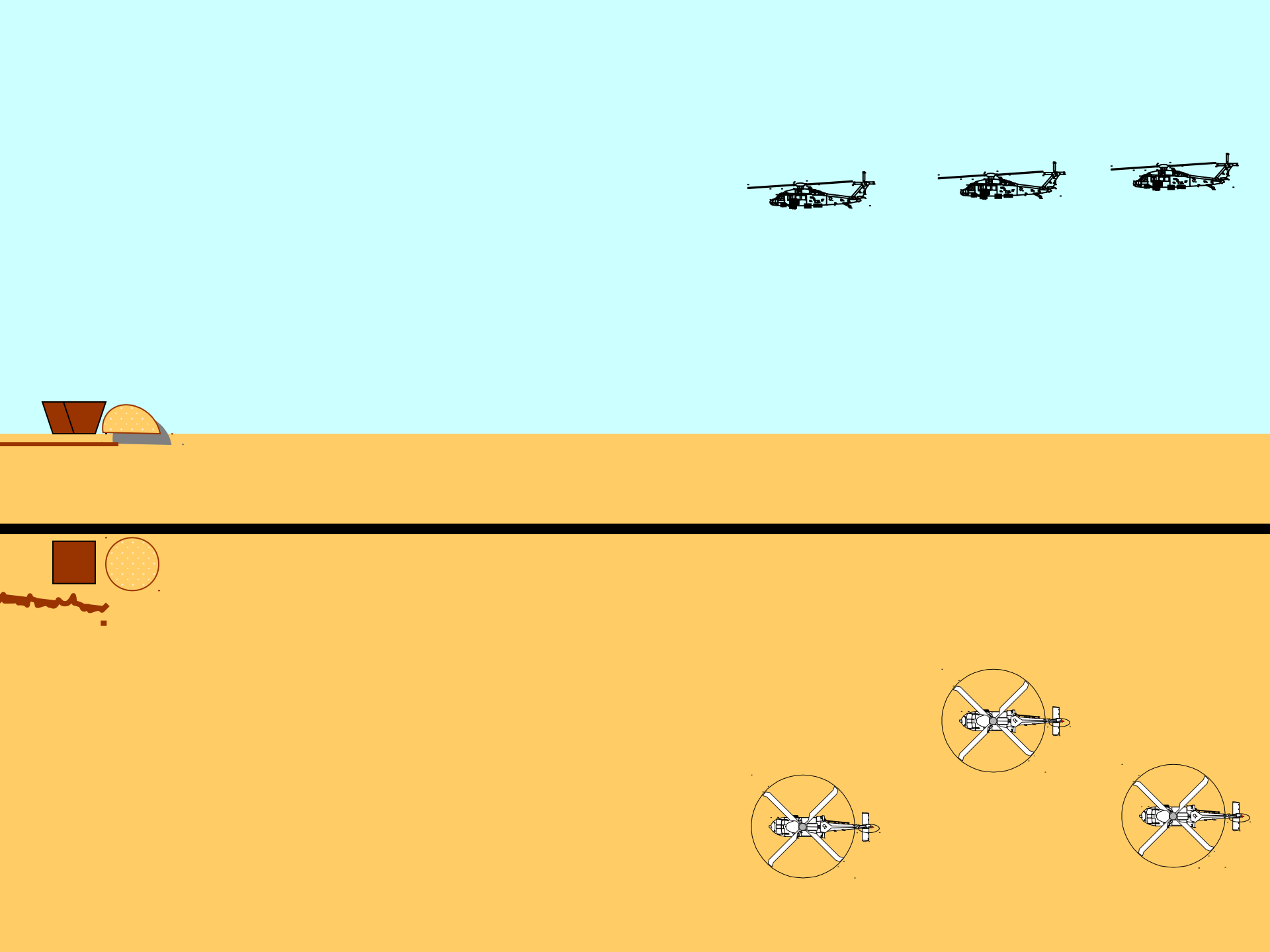
- Human error is real, is powerful, & no one is immune
  - We all make mistakes
  - Human error causes 9 out of 10 mishaps
  - If you're OK right now, who else may not be?
- CAN still be a lean, mean, fighting machine
  - Risk managed to project combat power forward
  - Enables aggressive yet protected Soldier

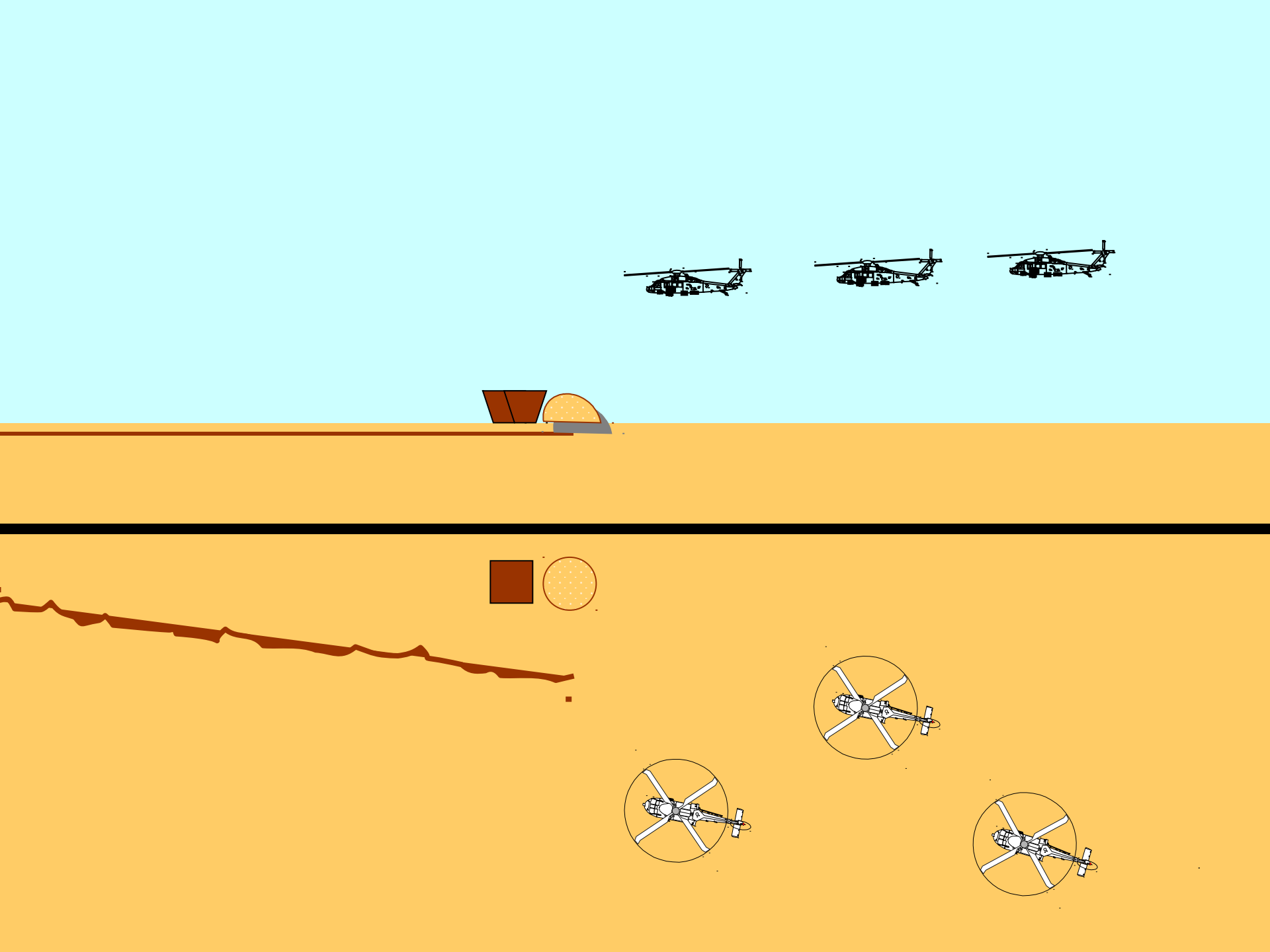
**READINESS**



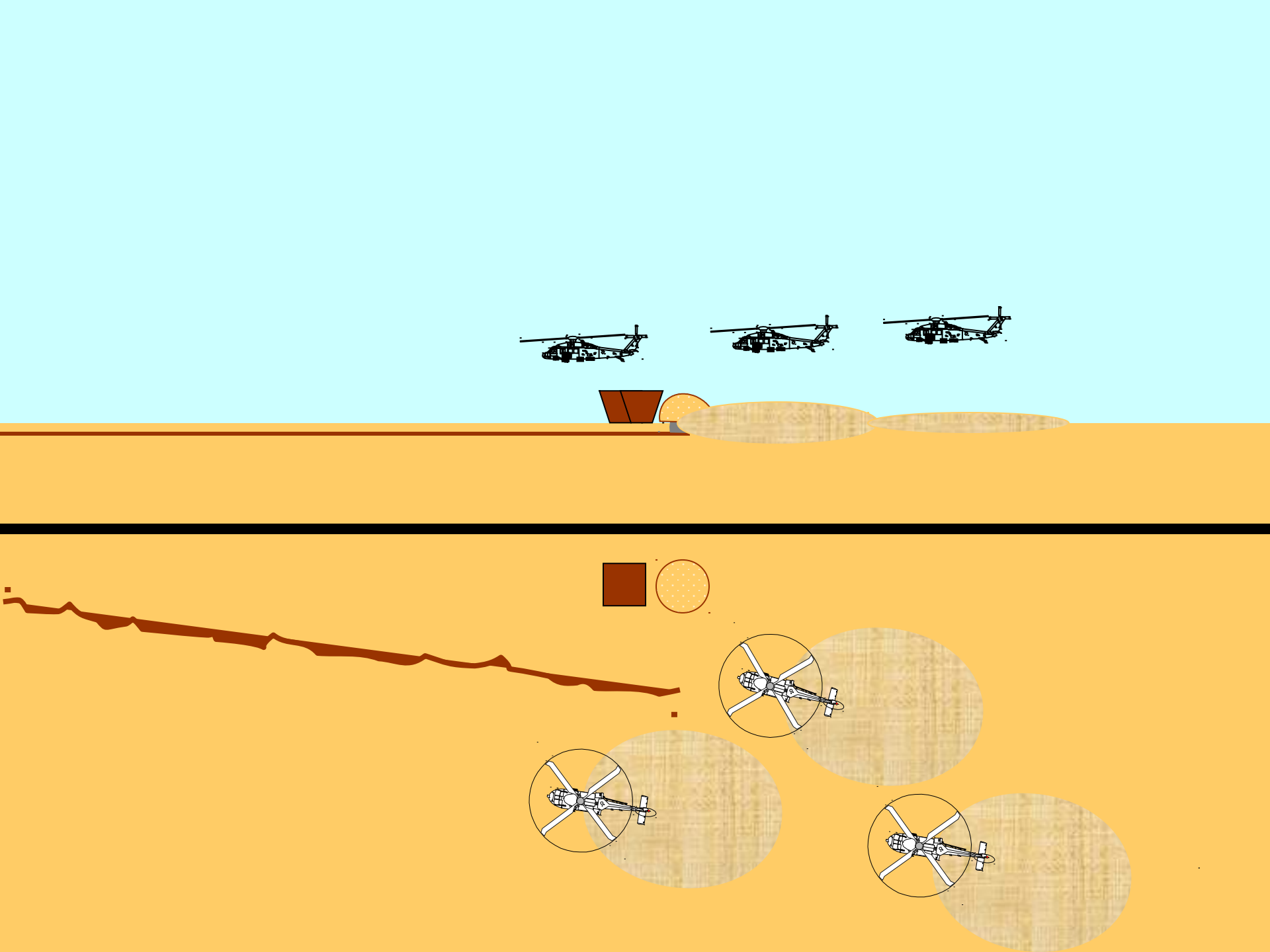
# **Transformed Approach**

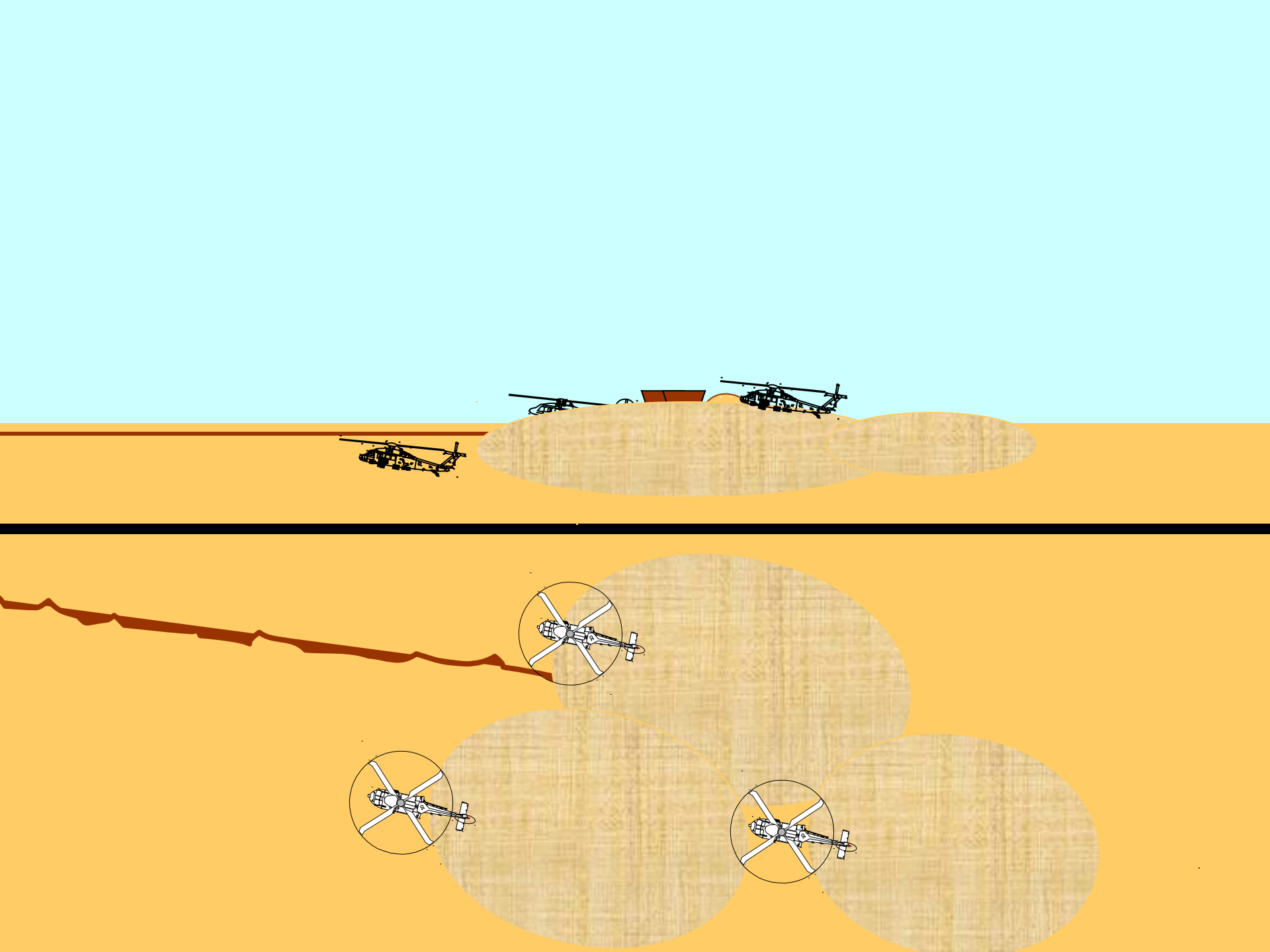
- Composite risk assessment means new perspectives on hazards
  - Increased awareness to ID all the dangers
  - Goes beyond METT-TC & formal MDMP
- Risk assessment is more comprehensive
  - Sequences (before-during-after)
  - Cumulative effects, interaction with time
  - Trade-offs
  - Synergy:  $1 + 1 = 3$

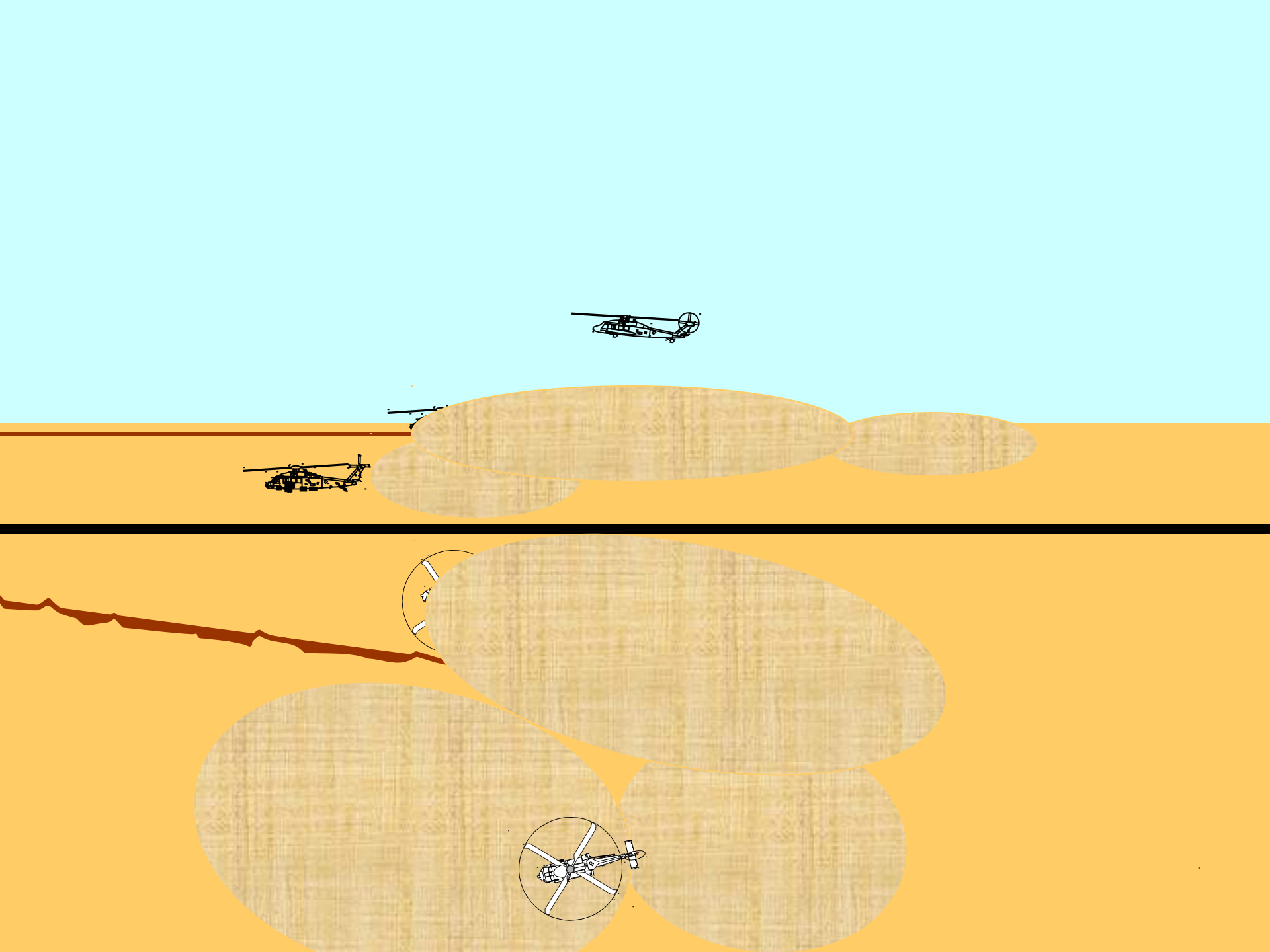




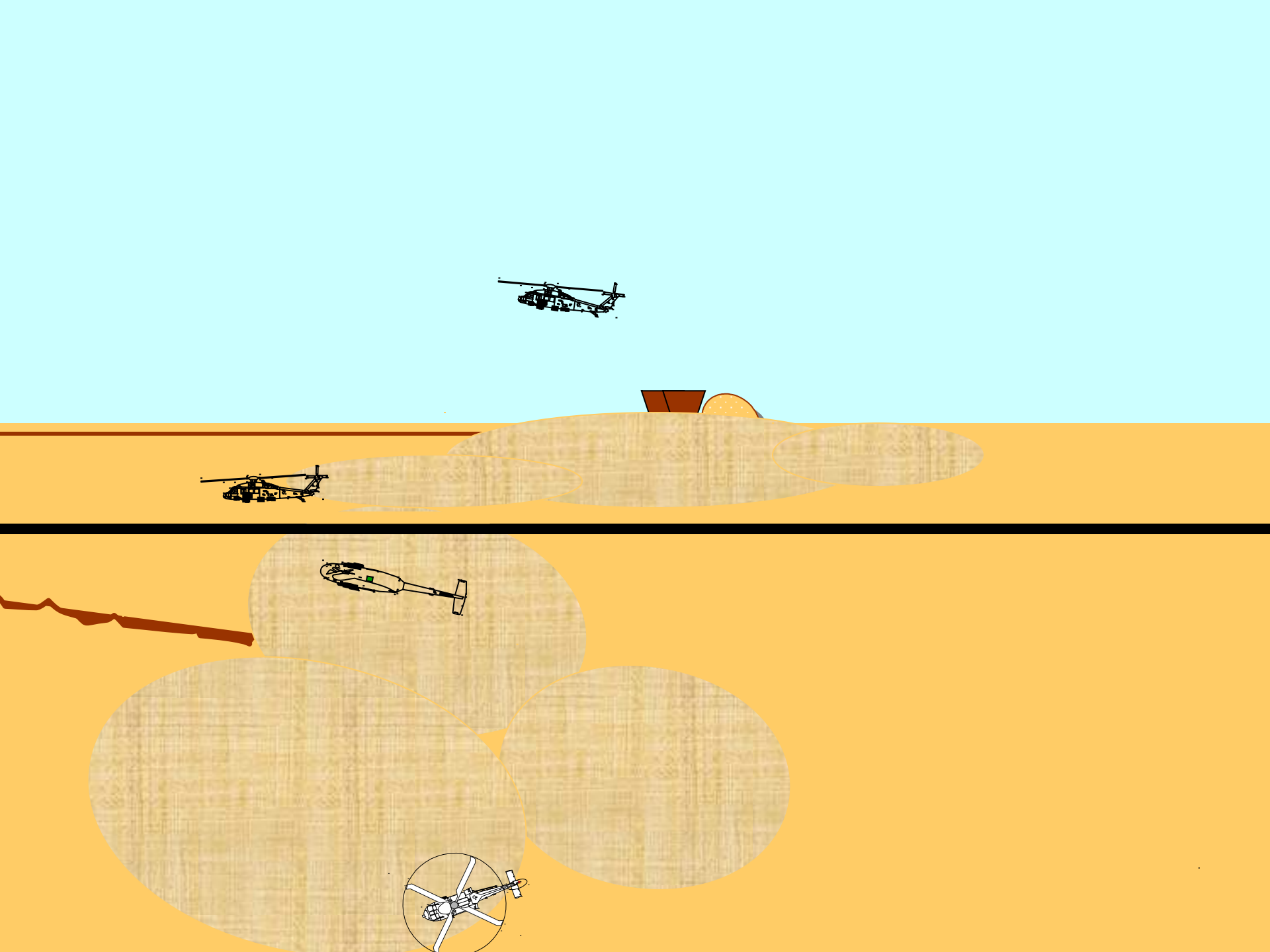


















# **Transformed Approach**

- Composite risk management means managing assets 24/7
- Unit works together to keep readiness high
  - Leaders manage preservation as part of power
  - Followers understand & help, not hinder



# Transformed Actions

## Hazard ID expands

- Ask “What can kill me or my buddies?”
- Ask “What can hurt me or my buddies?”
- Ask “Who can kill/hurt me or my buddies?”
- Consider more human error (refer to HFACS)
- Include acts of omission as well as commission
- Get Soldiers involved in hazard ID
- Look at the periphery, the before/after for the task, & off duty . . . 24/7
- Expand your sources of information: higher HQ, CALL, peers, safety experts, independent set of eyes, publications, website tools, grapevine

# Hazard ID

- Hazards currently on the radar screen
  - IEDs, RPGs
  - High center of gravity, models of a system
  - Dust, fog, night, wires, inadequate road surfaces (interact with vehicle weight & width, or rain)
  - “Human hazards”: inexperience, indiscipline, immaturity, carelessness, complacency, overconfidence, inattention, speed, fatigue, negative habit transfer, alcohol, poor planning, poor leadership, poor supervision, standards or procedures not enforced, hands off attitude, making inaccurate assumptions, OPTEMPO, organizational climate, individual personality



# Factors Impacting Performance

$$P = (A + S + K) * ME$$





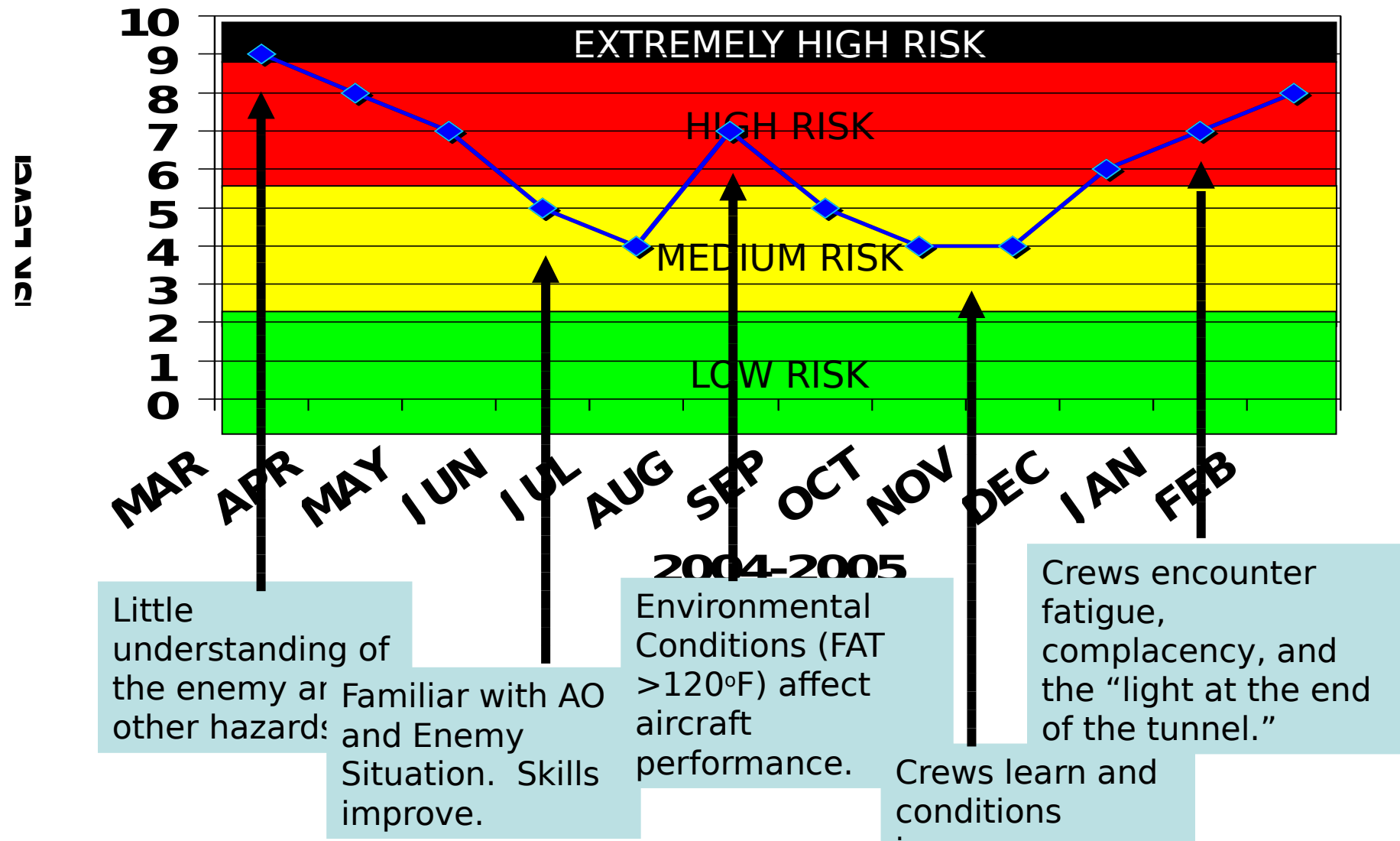
# Transformed Actions

## ■ Risk assessment (probability x severity) expands

- Statistics & stories give a REALITY check
- Personal experience provides judgment
- Realize that things under one's control are perceived as less probable & less severe
- Consider interactions: cumulative effects, time effects, sequencing, synergy
- A worksheet is only a tool, not a set solution
- Do assessments HOLISTICALLY (not segmented)
- Assess risks even when there's no worksheet

# RISK MITIGATION

## The Life Cycle of a Deployment to OIF



## **The Score:**

- Gravity: 1 AH-64D Destroyed; 2 OH-58D Destroyed (2 FataIs)
- Wires: 1 AH-64D Damaged, 1 x OH58 Destroyed (2 FataIs)
- Birds: Multiple Aircraft Damaged
- Kites / Antennae: Multiple Near Misses
- Other Helicopters: Multiple Near Misses
- UAVs: 1 OH-58D Damaged
- Environment: 2 OH-58D Destroyed
- Small Arms: 1 OH-58D Destroyed
- RPG: 1 OH-58D Destroyed
- MANPADs: 1 AH-64D Destroyed (2 KIAs)

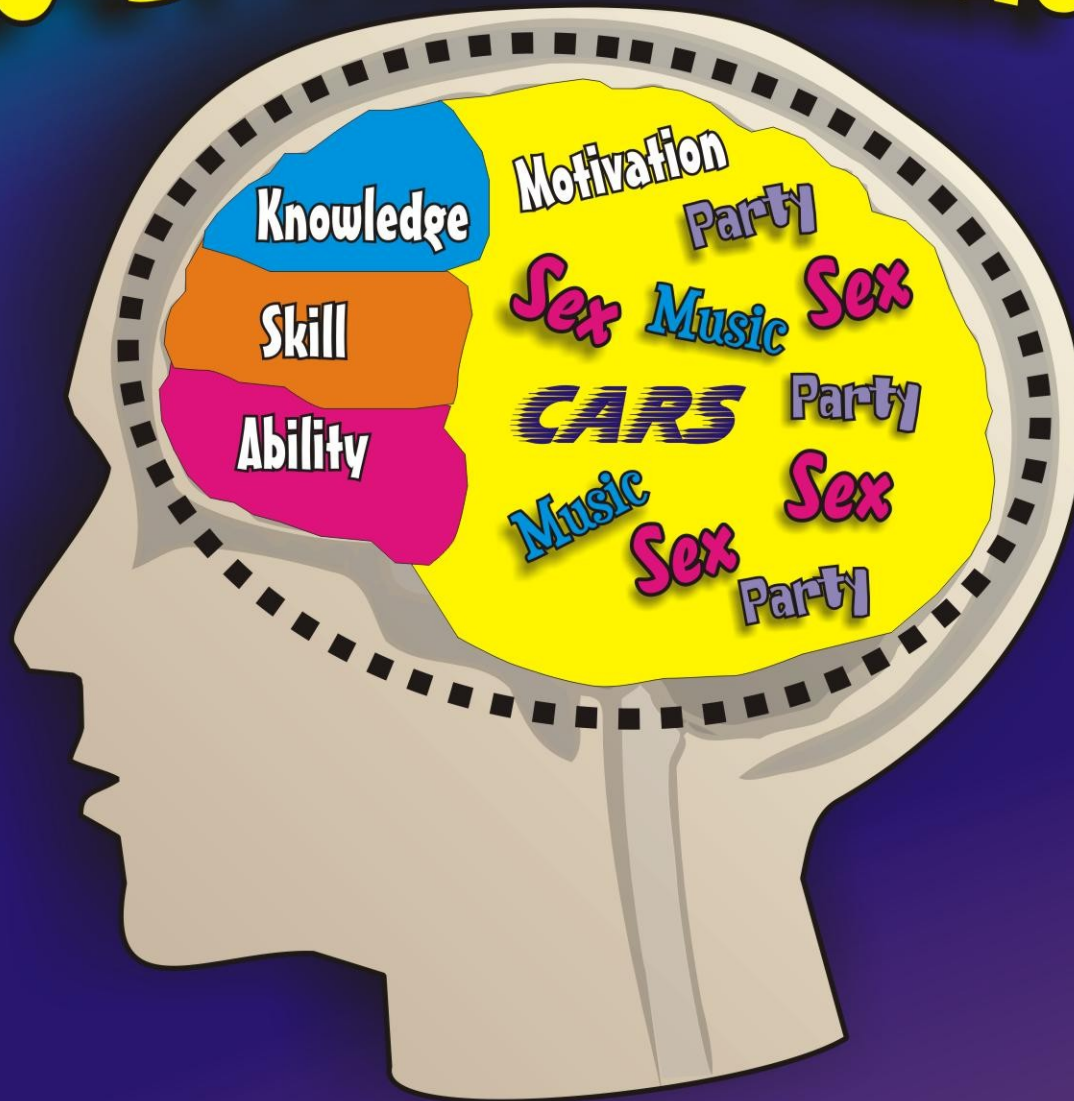


# Transformed Actions

## ■ Controls & implementation: DOTMLPF and HFACS

- O: Mitigate OPTEMPO & HOOAH climate; use participation for hazard ID & controls
- T: Train for knowledge & skill deficiencies, especially in crew/team coordination, decision making, weapons clearing, driving
- L: Engaged, involved supervision with focus on readiness; intrusive leadership for off duty
- P: People have accidents; know your people & manage them accordingly

# The 18-24 Year Old Male Brain



# Transformed Actions

## Supervise

- Plan being executed? Unfolding as planned?
- What am I learning right now that sheds light on composite risk, readiness, & mission accomplishment?



# RISK MITIGATION

## The Pilot in Command Manages Risk During the Flight

### The Hazards:

- Gravity\*
- Wires\*
- Birds
- Kites / Antennae
- Other

### Helicopters\*

- UAVs
- Environment\*
- Small Arms
- RPG
- MANPADs

\*always present

### The Controls:

- Airspeed (High/Mid/Low)
- Altitude (High/Mid/Low)
- Flight Maneuvers  
(Aggressive/Moderate/Subtle)
- ASE
- Hazard Maps (Current Threat and Man Made Hazards)
- Communications
- Crew Coordination  
(Scanning/Navigation/Flight/etc.)
- Planning
- Professionalism

# Summary

- CRM has a bottom line, readiness thrust
- Consider assets 24/7
- Requires cultural change
  - You're important to the unit
  - Human error is real (HFACS describes much)
  - Transcends regs & compliance orientation
- Holistic look at hazards & risk
  - Threat & accidental
  - Think about combinations
- Controls consider more O, T, L, & P

# Back-ups



## **Belief the guidance is good**

*Appropriate & relevant for the individual  
Explained why it should be done  
Logical; employed facts correctly  
Worker sees benefit > cost  
(WIIFM?)*

## **Self-efficacy**

*Small steps  
"How to" training  
Simplicity*

## **Respect for leaders**

*Credible  
Sincere  
Helpful  
Role Model*

## **Respect for the worker**

*Allow them some control over their actions; trust based on past acts  
Listen & understand  
Provide what they need to succeed  
Partnering in plans & decisions*

**Buy-in**

+

**Commitment**

=

**Safe Behaviors**

## **Perception**

*The big picture: staying alive & healthy = desirable quality of life  
Heroes & desirable models impact how I view safe behavior  
Being safe is MY idea  
It CAN happen to me (experience from near misses, stories of others)*

## **Motivate**

*Smart is good! Stupid is bad!  
Do it for the team & loved ones  
Reinforce correct acts*

## **Accountability**

*Set expectations  
Be involved; engage!  
Follow up  
Consequences (+/-)*